Department of Mathematics & Statistics
Concordia University

MATH 265
Advanced Calculus II
Winter 2016

Instructor*: _____

Office/Tel No.: _____

Office Hours: _____

* Students should get all the above information from their own instructor. The instructor is the person to contact if there are any questions about the course.

Prerequisites: Math 264 or an equivalent multivariable differential calculus course.

Text: *Multivariable Calculus*, 8th Edition, by J. Stewart. ISBN: 978-1-111-56401-8.

Assignments: Assignments are *very important* as they indicate the level of difficulty of the problems that the students are expected to solve and understand. Therefore, every effort should be made to do and understand them *independently*. The assignments will be corrected and a representative sample graded, with solution sets posted weekly. These grades together are worth a maximum of 10%.

Web Resources: Many excellent animated illustrations to the text are collected at the site www.stewartcalculus.com, see TEC (Tools for Enriching Calculus) for the Edition 7. Regular use of this resource is recommended.

Use of Computer Algebra System: It is optional but much recommended to install and use Maple or Mathematica. These computer tools can be used to verify and illustrate any analytical results you get while doing your assignment problems.

Calculators: Electronic communication devices (including cell phones) are not allowed in examination rooms. Only calculators approved by the Department (with a sticker attached as proof of approval) are permitted in the examination rooms during mid-term and final. The preferred calculators are the **Sharp EL 531** and the **Casio FX 300MS**, available at the Concordia Bookstore.

Test: A midterm test covering the first six weeks will be given in week 7 (or later), weighing 30%.

Final Grade: The highest of the following:

- 100% final exam
- 30% midterm, 10% assignments, and 60% final exam.

Week	Sections	Topics	Assignments	Due date
1	15.1	Double and iterated integrals; Fubini's Theorem	p.1039: 3, 10, 12, 22, 32, 42, 47	
2	15.2	Double integrals over general regions	p.1048: 8, 12, 18, 30, 48, 52	
3	15.3, 15.4	Double and iterated integrals in polar coordinates; Applications of double integrals	p.1054: 6, 8, 18, 26, 31, 36 p.1065: 10	
4	15.4, 15.5	Applications of double integrals (continuation); Surface area	p.1065: 12, 14, 18, 30 p.1068: 4, 6, 10	
5	15.6, 15.7, 15.8	Triple integrals Triple integrals in cylindrical and spherical coordinates	p.1077: 2, 6, 14, 20 p.1083: 7, 16, 20, 24 p.1089: 8, 22, 35, 41	
6	15.9	Change of variables in multiple integrals	none	
7	16.1, 16.2	**Mid-term exam** Vector fields. Line integrals	p.1100: 8, 13, 24, 26 p.1113: 6, 24, 31 p.1124: 8, 14, 22, 41	
8	16.3, 16.4	Fundamental theorem for line integrals; Green's Theorem	p.1134: 2, 8, 16, 24 p.1141: 5, 10, 18, 19, 23	
9	16.5, 16.6	Curl and Divergence; Parametric surfaces	p.1149: 6, 10, 18, 33 p.1160: 6, 17, 20, 26, 30	
10	16.6, 16.7	Parametric surface (continuation); Surface integrals	p.1160: 2, 4, 14, 24, 42, 48 p.1172: 4, 6, 10, 18	
11	16.7, 16.8	Surface integrals (continuation); Stokes' Theorem	p.1172: 21, 22, 24,26 p,1179: 4, 8, 14, 16	
12	16.9	Divergence Theorem	p.1185: 4, 8, 10, 12, 18, 24	
13		Review		